

# Drilling Essentials

## For New Engineers & Non - Technical Professionals

**Gain a beginning to end view of the entire process & activities around the rig and well planning to enhance team efficiency and productivity**

**21 – 22 May 2012 Brisbane, Australia**



**Your Expert Trainer: Franz Hartstein**

International industry veteran with over 30 years of field and business experience in upstream Oil & Gas. Franz has gained his near thirty year experience in the Oil and Gas Drilling Industry around onshore and off shore facilities in Australia, the North Sea, Middle East, USA, Europe & Asia. He has experience in nearly every position around the rigs, including; roustabout, roughneck, derrick man, assistant driller to barge captain

**Gain an overview of drilling procedures, the terminology used, its cost components and the latest technological developments driving this activity**

**By attending this 2-day industry fundamentals training course, you will better able to:**

- ⊗ Understand drilling terminology & drilling processes for completing onshore & offshore wells
- ⊗ Appreciate major cost components of drilling operations and its impact for better project planning and management
- ⊗ Better visualise major drilling equipment and their technical functions to promote a deeper understanding of the logistical and technical considerations
- ⊗ Gain valuable insights on the drilling industry with a synopsis of recent technology developments that impact the drilling process

**UNIQUE FEATURES of this training course:**

- ⊗ Multi-media presentation methodology to enable better understanding and appreciation technical jargon and equipment applied in the field
- ⊗ A pre-course questionnaire to help us focus on your key learning objectives
- ⊗ Detailed reference manual for continuous learning and sharing
- ⊗ Limited class size to ensure one to one interactivity

**Previous participants for this course include the following:**

HESS Exploration Australia, Chevron Australia, Minerals and Energy Titles Group, Central Petroleum, Total E&P Australia, INPEX, Geological Survey Of Queensland, Total E&P Australia, Shell Development Australia, Woodside Energy, 2H Offshore Engineering and many others..



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## **ABOUT THE COURSE**

Time is money in the oil business. Drilling time is big money. Whether in a technical, managerial or supporting role, you are a valuable asset to ensuring that project delivery targets are met and profits are realised. As drilling activities continue to increase, professionals like you must grasp the language and technology of drilling operations in order to maximise expenditures throughout the producing life of a well.

Drilling equipment and procedures have a unique language that must be conquered for maximum benefit. Clear and understandable explanations of drilling rig equipment, procedures, and their complex interactions provide an excellent foundation for smooth communication and increased efficiency in inter-department project team efforts.

Drilling Essentials will help you de-mystify activities around the rig and well planning. It will explain the fundamentals of drilling with an emphasis on key areas such as logistical considerations, costing, and analysis of drilling contracts. Understand the urgency of drilling requests, know more about the cost implications of drilling-related problems, and understand the risks involved in a drilling contract. With Franz's drilling knowledge and skills, this is your opportunity to explore and understand important drilling concepts, principles, and technology which are presented in a reader-friendly format and illustrated with examples. As a non-drilling professional, you too can grow with the drilling industry with a deeper understanding of the critical role you play in contributing to its success!

Course registration begins at 8:30am on Day 1. The course will commence at 9am on both days. There will be breaks for mid-morning refreshments, lunch, and mid-afternoon refreshments. The course will end by 5pm on both days.

### **DAY ONE**

#### **Overview of Oil and Gas Exploration**

- Video clip – Industry overview
- Unique characteristics of the Oil Industry
- The colour of oil
- Brief History
- Whale Oil
- Cable tool rig
- Drilling practices. A look at the drilling history
- The Barrel
- Today's utilization of a barrel of crude

#### **Source of Petroleum**

- Sedimentary rocks, types of sediment
- Reservoir rocks and formation of oil and gas
- Video clip – origin of oil and gas, seismic and drilling

#### **Coffee /Tea Break**

- Examples of traps
- Types of pressure
- Predicting over-pressures
- Planning stage, before drilling the well
- While drilling

#### **The E&P process**

- Upstream and down stream
- Exploration, Appraisal, and Development Drilling,
- Scenario and Environment
- Location

#### **Mobilize and transport drilling equipment, basic and critical equipment used**

- Drilling on land – basic land rigs
- Video clip-drilling on land

#### **Offshore rigs**

- video clip-drilling offshore
- floating rigs and fixed platforms
- Semisubmersibles, Drill ships, Tender assisted rigs
- Jackups and steel platforms.
- Video clip-jackup.
- Tension leg platforms, spars

#### **Lunch**

#### **Drilling rig and its facilities**

- Components
- Rig Schematic

#### **Coffee / Tea Break**

#### **A drilling rig consists of five main systems**

1. The derrick, the hoisting system; crown block, traveling block, drilling line
2. The power system
3. The rotating system
  - Kelly Drive, Top drive
4. The circulating system
  - Mud pump, shale shaker, desander, desilter
5. Well control system, BOP
  - Kicks, their causes and prevention
  - video clip - Well control

## Drilling fluid-mud, different types, benefits and disadvantages

### Problems caused by poor waste management

- Disposal of cuttings and drilling fluid

### Drill Bits and their function

## DAY TWO

### Drill string design and BHA

#### Drill pipe

- Types of drill string failures and their causes
- Regular drill pipe inspections

#### Drilling sequence

##### a. What happens on the drill floor?

- Mouse hole connection
- Making a round trip
- Racking stands of drill pipe

Video- work on the rig floor

#### Drilling with stands

- Mud buckets

#### Well plan, drilling time/ depth curve

Coffee / Tea Break

#### Running casing

- Casing types and casing design
- How the different casing sizes are installed
- Running casing in detail
- Cementing casing

#### Well heads

#### Evaluation and completing the well

- Types of evaluation methods,
- Mud logging, wireline logging tools,
- Drillstem testing
- MWD& LWD

Lunch

#### Well completions

- Rotary steering
- Directional, horizontal, extended reach, multilateral drilling and intelligent wells.
- Video -directional drilling
- Types of well completions
- Primary and secondary recovery

#### The Drilling Organisation

- Workover, Well Interventions
- Side track, whipstock
- Video c – side track
- Introduction to coiled tubing

Coffee / Tea Break

#### Newer drilling techniques

#### Overcoming different challenges and complications in drilling operations

- Challenges on the drill floor
- Iron roughnecks
- Automatic stabbing arms
- Stabbing guides
- Second mouse hole
- Automated pipe handling systems and bridge cranes
- Casing running tools
  - i. Casing fill-up tool
  - ii. Fully automatic pipe running equipment, casing and drill pipe
  - iii. Challenges and complications in drilling operations down hole

#### Fishing

Video -fishing

#### Drilling cost calculation – well costing

- Overview of the well construction process
- Reporting cost from the rig in the morning report

#### Logistical considerations for onshore and offshore operations.

#### Market forces affecting the drilling industry

#### Oil and Gas Pricing

End of Course

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## Who Should Attend

New engineers and forward-looking executives in the following fields who are interested in enhancing their knowledge and awareness of the drilling process for increased productivity & contribution to the team they're supporting:

Accounting – Administration - Business Development – Commercial - Drilling Fluids - E&P IT - Estimation & Proposal - Finance and Administration - Finance – Reservoir - General management – HSE - Joint Ventures - Legal – Logistics - Materials Planning – Planning & Budgeting- Procurement – Sourcing - Supply Chain - Tender/ Contract - Training

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OVER 500 PARTICIPANTS  
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**About Your Expert Trainer: Franz Hartstein**



Franz Hartstein has gained his near thirty year experience in the Oil and Gas Drilling Industry around onshore and off shore facilities in Australia, the North Sea, Middle East, USA, Europe & Asia. He has experience in nearly every position around the rigs, including; roustabout, roughneck, derrick man, assistant driller, barge captain.

As a Drilling Engineer since 1967, Franz is thoroughly familiar with the drilling operations, has sound understanding of the engineering principles involved and gained substantial hands on knowledge of related well services. After studying Drilling Engineering at the Deutsche Bohrmeisterschule, Celle, Germany, he went on to work as an engineer around rigs in Europe, the Middle and Far East, for Weatherford, Agip, Nioc, Siri in Iran, Aramco in Saudi Arabia, Adnoc, Conoco being some of the clients.

Gravitating towards the Oil and Gas Service side, he spent time on business development for Weatherford in the USA, and transferred to Singapore as M.D. for Weatherford in Asia. As an MD for Weatherford, he was responsible for all aspects of Company management, business development, training, customer relations and client consulting. Franz then became a partner in Borneo Oil Tool Pte Ltd in Singapore. He was responsible for the operation, business development and expansion of the company within the Industry. The company was an agent representing various products for the Oil & Gas clients. He was also involved in the design of completion tools, fabricating equipment and operating the equipment on clients rigs around Asia. He was also responsible in designing & development of the training and introduction manual for the technical products. He personally delivered the training to various Oil & Gas personnel in the region, including Conoco, Philips, Total, Arco, Amerada Hess, and Mobil. With more than 30 years in the upstream Oil & Gas industry, he is familiar with the entire phase of exploration and production, with global experience including, Middle East, USA, Europe & Asia. He has gained unique global insights into the teaching fundamentals of exploration and production through numerous presentations to various Oil & Gas companies globally.

**Hear what previous participants have said about this course:**

- Eye opener, concise, well-structured  
**Talisman Malaysia Limited**
- Excellent coverage necessary to work effectively with drilling operations  
**Sarawak Shell Berhad**
- Knowledgeable trainer, great handouts.  
**Murphy Oil Co. Ltd**
- Well organised, knowledgeable and experience speaker  
**SapuraCrest Petroleum**
- A good insight into the overview of drilling and its technicalities  
**CPOC**
- The training was very informative and Franz, as trainer, did his job excellently  
**SapuraCrest Petroleum**



Professionals in the Oil & Gas industry are constantly re-inventing themselves. To meet this challenge, PetroEdge provides up-to-date, practical and technically sound training solutions that enable engineers and Oil & Gas professionals to be continuously relevant in industry.

PetroEdge competency based courses specify new and essential skills engineers need to have to perform their duties efficiently. This enables engineers to apply themselves immediately in the workplace after attending our courses hence creating value for the organisation. Learn more through [www.petroedgeasia.net](http://www.petroedgeasia.net)

# REGISTRATION FORM

## Delegate Registration Details

21 – 22 May 2012, Brisbane, Australia	Early Bird Price	√	Normal Price	√	<b>TEAM DISCOUNTS</b>
2- day Drilling Essentials for New Engineers and Non - Technical Oil & Gas Professionals	AUD 2150		AUD 2350		PetroEdge recognises the value of learning in teams. Group bookings at the same time from the same company receive the following:  3 or more at 5% off 5 or more at 7% off 8 or more at 10% off
Petroedge In-house Solutions  { } Yes, I would like to organise this training on-site and save over 20% of total course fees! For further information about On-site Solutions, please call +65 6741 9927 or email info@asiaedge.net					<b>The early bird discount is exclusive of the team discounts and other promotions</b>

## DELEGATE DETAILS

Delegate 1: \_\_\_\_\_ Mr  Mrs   
 Ms  Dr  Other

Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

Job Title: \_\_\_\_\_

Department: \_\_\_\_\_

Delegate 2: \_\_\_\_\_ Mr   
 Mrs  Ms  Dr  Other

Telephone: \_\_\_\_\_ Email: \_\_\_\_\_

Job Title: \_\_\_\_\_

Department: \_\_\_\_\_

Head of Department: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Country: \_\_\_\_\_

Postcode: \_\_\_\_\_

Attention Invoice to: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

### 4 Easy Ways to Register

Online: [www.petroedgeasia.net](http://www.petroedgeasia.net)

Email: [caroline@asiaedge.net](mailto:caroline@asiaedge.net)

Phone: (65) 6741 9749

Fax: (65) 6747 8737

Please note:

- indicate if you have already registered by Phone  Fax  Email  Web
- if you have not received an acknowledgement before the training course, please call us to confirm your booking.
- photocopy this form to register multiple delegates.

#### Payment Methods

**By Cheque/ Bank Draft: Make Payable to Asia Edge Pte. Ltd.**

**By Direct Transfer: Please quote AE1 with the remittance advise**

Account Name: Asia Edge Pte. Ltd.

Bank Number: 508 Account Number: 762903-001 Swift Code: OCBSCSGG

All bank charges to be borne by payer. Please ensure that Asia Edge Pte Ltd receive the full invoiced amount.

**PAYMENT POLICY:** Payment is due in full at the time of registration. Full payment is mandatory for event attendance. I agree to Asia Edge Pte Ltd. payment terms

**CANCELLATIONS & SUBSTITUTIONS:** You may substitute delegates at any time. ASIA EDGE PTE LTD does not provide refunds for cancellations. For cancellations received in writing more than seven (7) days prior to the training course you will receive a 100% credit to be used at another ASIA EDGE PTE LTD training course for up to one year from the date of issuance. For cancellations received seven (7) days or less prior to an event (including day 7), no credits will be issued. In the event that ASIA EDGE PTE LTD cancels an event, delegate payments at the date of cancellation will be credited to a future ASIA EDGE PTE LTD event. This credit will be available for up to one year from the date of issuance. In the event that ASIA EDGE PTE LTD postpones an event, delegate payments at the postponement date will be credited towards the rescheduled date. If the delegate is unable to attend the rescheduled event, the delegate will receive a 100% credit representing payments made towards a future ASIA EDGE PTE LTD event. This credit will

be available for up to one year from the date of issuance. No refunds will be available for cancellations or postponements.

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**PROGRAM CHANGE POLICY:** Please note that speakers and topics were confirmed at the time of publishing; however, circumstances beyond the control of the organizers may necessitate substitutions, alterations or cancellations of the speakers and/or topics. As such, ASIA EDGE PTE LTD reserves the right to alter or modify the advertised speakers and/or topics if necessary. Any substitutions or alterations will be updated on our web page as soon as possible.

**ASIA EDGE PTE. LTD.**

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